

Index

Special Characters

- .NET Framework
 - application compatibility for IIS server upgrades 155
 - application compatibility for IIS Web site migrations 215
 - ASP.NET applications See ASP.NET applications
 - configuring for IIS server upgrades 180–181
 - configuring for IIS Web site migrations 250
 - correct version for IIS server upgrades 180
 - correct version for IIS Web site migrations 249
 - running applications in IIS 5.0 isolation mode for IIS server upgrades 181–183
 - running applications in IIS 5.0 isolation mode for IIS Web site migrations 251
 - running applications in worker process isolation mode for IIS server upgrades 182–183
 - running applications in worker process isolation mode for IIS Web site migrations 251–252
 - side-by-side configuration 156

A

- additional resources
 - availability 135
 - deploying ASP.NET applications 38–39
 - migrating Apache Web sites 309
 - migrating IIS Web sites 266
 - security 104–105
 - upgrading IIS servers 196
- Administrator account 387
- affinity
 - setting processor (procedure) 388–390
 - setting to improve availability 126
- Aiismt_Status.html 294
- anonymous access 88, 178, 321
- Apache to IIS 6.0 Migration Tool
 - configuring target servers for migrations 289–290
 - installation options 279
 - installation overview 287–288

- Apache to IIS 6.0 Migration Tool *(continued)*
 - installing on computers running Linux 288
 - installing on computers running Windows 288–289
 - intermediate computer installation option 282–283
 - migrating Web site configurations 292–293
 - migrating Web site content 290–292
 - overview 270
 - recovering from interruptions 293
 - restarting in recovery mode 294
 - role identification 278
 - source server installation option 281
 - status file 294
 - steps for migration 278–279
 - target server installation option 282
 - verifying clients are not accessing Web sites 290

- Apache Web sites
 - additional resources 309
 - application compatibility with worker process isolation mode 277
 - backing up target servers 307
 - configuring FTP service on target servers 286
 - configuring IIS 6.0 302–307
 - configuring MIME types 305
 - configuring properties 305–306
 - configuring server certificates for SSL 306
 - configuring Web service extensions 303–305
 - deploying target servers 283–286
 - enabling client access after migrations 308–309
 - IIS 6.0 compatibility 275–276
 - installing IIS 6.0 on target servers 285–286
 - installing Migration Tool 287–290
 - installing Windows Server 2003 on target servers 284–285
 - migrating Apache-specific extensions 294–301
 - migrating configurations 292–293
 - migrating content 290–292
 - migrating database connectivity 299–300
 - migrating database content 298–299

Apache Web sites *(continued)*

- migrating dynamic content 296–297
- migrating external modules 300–301
- migration errors 293–294
- migration overview 269–270
- migration process 271–274
- Migration Tool installation options 279–283
- Migration Tool role 278
- overview of preparing to migrate 274
- performing migration steps 286
- recovering from migration interruptions 293–294
- verifying clients are not accessing Web sites 290

application availability *See* availability

application isolation

- configuring settings for IIS 5.0 isolation mode (procedure) 325
- configuring settings for IIS server upgrades 167–169
- configuring settings for IIS Web site migrations 238–241
- described 149, 208, 277
- documenting current settings for IIS server upgrades 166
- documenting source server settings for IIS Web site migrations 238
- server needs 117
- viewing configurations (procedure) 391–392

application isolation modes

- IIS 5.0 *See* IIS 5.0 isolation mode
- worker process *See* worker process isolation mode

application pool health

- configuring (procedure) 326–327
- managing 127–130

application pool health detection 127**application pool identity**

- configuring (procedure) 327–328
- configuring for availability 130

application pool performance (procedure) 328–330**application pool recycling** (procedure) 330–332**application pools**

- assigning applications 117–118
- configuring rapid-fail protection for worker processes for availability 128

application pools *(continued)*

- configuring rapid-fail protection for worker processes (procedure) 327
- configuring shutdown time limits for worker processes 129
- configuring startup time limits for worker processes 129
- creating 117–118
- debugging failures (procedure) 357–358
- described 109
- enabling debugging 129–130
- isolating applications (procedure) 375–376
- pinging worker processes for application pool health detection 127
- pinging worker processes (procedure) 327

application-specific IIS Web site migration tasks

- creating IP addresses 260
- creating registry entries 261
- creating users and groups 260
- installing additional software 257
- migrating MTS packages, COM objects, and COM+ applications 258
- modifying applications for worker process isolation mode 257
- modifying code for Windows Server 2003 and IIS 6.0 256–257
- modifying metabase properties 256–257
- modifying ODBC data connection strings and DSNs 259
- modifying Windows components and APIs 256
- overview 254

ASP.NET applications

- additional resources 38–39
- availability 35–36
- backing up Web servers after deployments 37
- completing deployments 34–37
- configuring (procedure) 319–321
- configuring IIS 6.0 for Web site migrations *See* configuring IIS 6.0 to host ASP.NET applications for Web site migrations
- configuring state service on state servers (procedure) 342
- creating SQL Server databases for session states (procedure) 354

ASP.NET applications (*continued*)

- deploying Web servers 19–22
- deployment overview 15–17
- deployment process 17–19
- enabling (procedure) 360–361
- enabling in Web service extensions list 21
- enabling client access after deployments 37
- IIS 5.0 isolation mode vs. worker process isolation mode 181–183
- installing See installing ASP.NET applications
- installing IIS 6.0 21
- installing Windows Server 2003 20
- security steps 35–36
- side-by-side configuration 156
- updating script maps 180
- verifying success of deployments 36
- viewing script maps (procedure) 319

Aspnet_wp.exe 181

assigning

- additional IP addresses to network adapters (procedure) 313
- applications to application pools 117–118
- server certificates to Web sites (procedure) 313

attack surfaces See reducing attack surfaces of Web servers

auditing

- described 98
- file access for Web site content 99
- security (procedure) 362–364
- Web site content (procedure) 364–366

authentication

- anonymous access 88, 178
- Basic 88
- configuring anonymous access (procedure) 321
- configuring Anonymous FTP (procedure) 333
- configuring Basic FTP (procedure) 334
- configuring FTP server (procedure) 333–334
- configuring Web server (procedure) 345–346
- encryption methods 88–89
- FTP site 90
- installing subauthentication (procedure) 374–375
- Internet-based Web sites and applications 87

authentication (*continued*)

- intranet-based Web sites and applications 87
- server certificates See server certificates
- subauthentication not installed by default 135
- user configuration overview 85–86
- Web site configuration overview 87
- Web site methods 87–89

automatic startup for services 48

availability

- additional resources 135
- ASP.NET applications 35–36
- configuration overview 115
- configuring application pool identity 130
- enhancements 12–13, 151–152, 211–212
- goals 111–115
- isolating applications 116–118
- managing application pool health 127–130
- overview 107
- process 108–110
- recycling worker processes 118–123
- request-handling goals 113–115
- testing applications for compatibility 131–135
- tuning performance 123–126
- WWW service goals 112–113

B

backing up

- metabase (procedure) 315–316
- metabase for IIS server upgrades 163–164
- registry entries (procedure) 314
- servers for IIS server upgrades 158, 195
- target servers for Apache Web site migrations 307
- target servers for IIS Web site migrations 265
- Web servers (procedure) 316
- Web servers for ASP.NET deployments 37

Basic authentication 88

C

CDONTS (Collaboration Data Objects for Microsoft Windows NT Server) 377

centralized binary logging 101

Collaboration Data Objects for Microsoft Windows NT Server (CDONTS) 377

components

- changes after IIS server upgrades 147–148
- configuring IIS (procedure) 335
- enabling for IIS server upgrades 176
- enabling IIS 59–68
- enabling Windows Server 2003 48–59
- identifying for IIS Web site migrations 206–207
- modifying for IIS Web site migrations 256

configuring

- application identity for IIS 5.0 isolation mode (procedure) 323
- application isolation settings for IIS 5.0 isolation mode (procedure) 325
- application isolation settings for IIS Web site migrations 238–241
- application pool health (procedure) 326–327
- application pool identity for availability 130
- application pool identity (procedure) 327–328
- application pool performance (procedure) 328–330
- application pool recycling (procedure) 330–332
- ASP.NET applications (procedure) 319–321
- availability *See* configuring availability
- FrontPage server roles (procedure) 332–333
- FTP server authentication (procedure) 333–334
- FTP service on target servers for Apache Web site migrations 286
- IIS 5.0 isolation mode (procedure) 324
- IIS 6.0 for Apache Web site migrations 302–307
- IIS 6.0 properties for server upgrades *See* configuring IIS 6.0 properties for server upgrades
- IIS 6.0 properties for Web site migrations *See* configuring IIS 6.0 properties for Web site migrations
- IIS 6.0 to host ASP.NET applications for server upgrades *See* configuring IIS 6.0 to host ASP.NET applications for server upgrades
- IIS 6.0 to host ASP.NET applications for Web site migrations *See* configuring IIS 6.0 to host ASP.NET applications for Web site migrations
- IIS components and services (procedure) 335
- IIS logs 99–101
- IP addresses and domain name restrictions (procedure) 336–339
- IP addresses assigned to Web sites (procedure) 335

configuring (*continued*)

- MIME types (procedure) 339–341
 - MIME types for Apache Web site migrations 305
 - MIME types for IIS Web site migrations 246–247
 - NTFS permissions (procedure) 341–342
 - properties for Apache Web site migrations 305–306
 - registry entries (procedure) 343–344
 - session states for ASP.NET applications 31–33
 - startup and shutdown time limits for worker processes (procedure) 327
 - state service on ASP.NET state server (procedure) 342
 - target servers for
 - Apache Web site migrations 289–290
 - user authentication *See* configuring user authentication
 - Web server authentication (procedure) 345–346
 - Web service extensions (procedure) 347–348
 - Web service extensions for Apache Web site migrations 303–305
 - Web service extensions for IIS Web site migrations 245–246
 - Web site identification numbers (procedure) 344–345
 - Web site permissions (procedure) 349–350
 - Web sites to be FrontPage extended (procedure) 322–323
 - Windows Server 2003 security settings 71–72
 - Windows Server 2003 services (procedure) 350–351
 - worker process isolation mode (procedure) 324
 - worker process isolation mode for IIS server upgrades 167
- configuring availability
- configuring application pool identity 130
 - isolating applications 116–118
 - managing application pool health 127–130
 - overview 115
 - recycling worker processes 118–123
 - tuning performance 123–126
- configuring IIS 6.0 properties for server upgrades
- anonymous user identity 178
 - enabling essential components and services 176
 - enabling WWW service 172
 - FrontPage extended Web sites 175

- configuring IIS 6.0 properties for server upgrades *(continued)*
 - IIS Lockdown Tool 175-176
 - MIME types 174
 - modifying metabase properties 174-175
 - overview 170
 - removing virtual directories 177-178
 - security-related configuration changes 176-178
 - UrlScan 175-176
 - Web service extensions 172-173
- configuring IIS 6.0 properties for Web site migrations
 - FrontPage users and roles 248
 - hosting ASP.NET applications 249-253
 - IIS Lockdown Tool 253
 - local user accounts 244-245
 - migrating server certificates for SSL 247
 - MIME types 246-247
 - overview 242
 - UrlScan 253
 - Web service extensions 245-246
- configuring IIS 6.0 to host ASP.NET applications for server upgrades
 - configuring .NET Framework 180-181
 - correct version of .NET Framework 180
 - cpuMask attribute 186-187
 - idleTimeout attribute 188
 - memoryLimit attribute 185
 - migrating health-related attributes 188-190
 - migrating identity-related attributes 190-192
 - migrating Machine.config attributes to metabase property settings 183-192
 - migrating performance-related attributes 186-188
 - migrating recycling-related attributes 185-186
 - overview 178
 - password attribute 192
 - pingFrequency attribute 189
 - pingTimeout attribute 189
 - requestLimit attribute 185
 - restartQueueLimit attribute 187
 - shutdownTimeout attribute 188-189
 - timeout attribute 185
 - username attribute 190-191
- configuring IIS 6.0 to host ASP.NET applications for server upgrades *(continued)*
 - webGarden attribute 186-187
 - worker process isolation mode 182-183
- configuring IIS 6.0 to host ASP.NET applications for Web site migrations
 - configuring .NET Framework 250
 - correct version of .NET Framework 249
 - IIS 5.0 isolation mode 251
 - migrating Machine.config attributes to metabase property settings 252-253
 - overview 249
 - worker process isolation mode 251-252
- configuring user authentication
 - anonymous access (procedure) 321
 - FTP site authentication 90
 - Internet-based Web sites and applications 87
 - intranet-based Web sites and applications 87
 - overview 85-86
 - Web site authentication methods 87-89
 - Web site configuration overview 87
- converting disk volumes to NTFS (procedure) 351
- converting to worker process isolation mode for IIS server upgrades
 - configuring application isolation settings 167-169
 - configuring IIS 6.0 167
 - documenting current application isolation settings 166
 - example 169-170
 - overview 164-165
- creating
 - application pools 117-118
 - home directories for ASP.NET applications 23-24
 - home directories for IIS Web site migrations 235-236
 - IP addresses for IIS Web site migrations 260
 - registry entries for IIS Web site migrations 261
 - service accounts (procedure) 352-354
 - SQL Server databases for ASP.NET session states (procedure) 354
 - users and groups for IIS Web site migrations 260
 - virtual directories (procedure) 355-356
 - virtual directories for ASP.NET applications 24-25

- creating (*continued*)
 - virtual directories for IIS Web site migrations 236
 - Web sites (procedure) 356–357
 - Web sites for ASP.NET applications 23–24
 - Web sites for IIS Web site migrations 235–236

D

- debugging application pool failures
 - enabling 129–130
 - procedure 357–358
- dedicated Web servers 44
- deploying ASP.NET applications
 - additional resources 38–39
 - availability 35–36
 - backing up Web servers 37
 - completing deployments 34–37
 - deploying Web servers 19–22
 - enabling ASP.NET in Web service extensions list 21
 - enabling client access 37
 - installing applications *See* installing ASP.NET applications
 - installing IIS 6.0 21
 - installing Windows Server 2003 20
 - overview 15–17
 - process 17–19
 - security steps 35–36
 - verifying success of deployments 36
- deploying IIS 6.0
 - availability *See* availability
 - deploying ASP.NET applications *See* deploying ASP.NET applications
 - deployment procedures (list) 311
 - migrating Apache Web sites *See* migrating Apache Web sites
 - migrating IIS Web sites *See* migrating IIS Web sites
 - moving from IIS 5.0 isolation mode to worker process isolation mode 10–13
 - overview of application compatibility 9
 - overview of deploying new Web servers 5
 - overview of Internet and intranet application deployments 9
 - overview of upgrading existing Web servers 6
 - overview of Web server deployments 2

- deploying IIS 6.0 (*continued*)
 - process for Web server deployments 3–6
 - security *See* security
- deployment procedures (list) 311
- directory transversal attacks 74
- disabled startup for services 48
- disabling network adapters (procedure) 359
- disk volumes
 - converting to NTFS (procedure) 351
 - securing root folders (procedure) 387
 - storing content 74–75
- displaying WWW service uptime data (procedure) 370

E

- enabling
 - ASP.NET (procedure) 360–361
 - ASP.NET in Web service extensions list 21
 - client access after
 - Apache Web site migrations 308–309
 - client access after ASP.NET deployments 37
 - client access after IIS server upgrades 195
 - client access after IIS Web site migrations 265
 - common storage for ASP.NET session states 26
 - components and services for IIS server upgrades 176
 - IIS components and services for security 59–68
 - logging (procedure) 361
 - MIME types for security 70
 - network adapters (procedure) 362
 - security auditing (procedure) 362–364
 - Web service extensions for security 68–70
 - Web site content auditing (procedure) 364–366
 - Windows Server 2003 components and services for security 48–59
 - WWW service (procedure) 364
 - WWW service after IIS server upgrades 147, 172
- encryption
 - authentication methods 88–89
 - configuring for ASP.NET applications 30–31
 - IPSec with remote administration 93
 - overview of confidential data exchanged with clients 90–91
 - SSL (Secure Sockets Layer) 92–93
 - VPN with remote administration 93

exporting server certificates (procedure) 367–368

extended Web sites

 configuring (procedure) 322–323

 extending using FrontPage (procedure) 382

 migrating Apache-specific extensions 294–301

 upgrading (procedure) 390

 upgrading for IIS server upgrades 175

F

File Transfer Protocol *See* FTP (File Transfer Protocol)

FrontPage

 configuring server roles (procedure) 332–333

 configuring Web sites to be extended
 (procedure) 322–323

 extending Web sites (procedure) 382

 migrating users and roles for IIS Web site
 migrations 248

 publishing Web site content (procedure) 382–385

 upgrading extended Web sites (procedure) 390

 upgrading extended Web sites for IIS server
 upgrades 175

FTP (File Transfer Protocol)

 configuring Anonymous authentication
 (procedure) 333

 configuring Basic authentication (procedure) 334

 configuring on source servers for Apache Web site
 migrations 286

 configuring on target servers for Apache Web site
 migrations 286

 configuring server authentication
 (procedure) 333–334

 monitoring connections (procedure) 379–381

 pausing sites (procedure) 381–382

 site authentication for security 90

G

gathering WWW service uptime data (procedure) 368

granting user rights to service accounts
(procedure) 370–372

Guest account 387

H

high availability *See* availability

home directories

 creating for ASP.NET applications 23–24

 creating for IIS Web site migrations 235–236

 migrating IIS Web site content 230–231

I

identity checking 93

IIS (Internet Information Services) 6.0

 availability *See* availability

 benefits 7–8

 deploying *See* deploying IIS 6.0

 deploying ASP.NET applications *See* deploying
 ASP.NET applications

 deployment procedures (list) 311

 enabling only essential components and
 services 59–68

 features 7–8

 installing (procedure) 374

 migrating Apache Web sites *See* migrating Apache
 Web sites

 migrating IIS Web sites *See* migrating IIS Web sites

 overview 7

 security *See* security

 subcomponents (list) 61–68

 upgrading servers *See* upgrading IIS servers

IIS 5.0 isolation mode

 application compatibility for Apache Web site
 migrations 277

 application compatibility for IIS server upgrades 149

 application compatibility for IIS Web site
 migrations 209

 compared to worker process isolation mode 10

 configuring (procedure) 324

 configuring application identity (procedure) 323

 configuring application isolation settings
 (procedure) 325

 configuring settings for
 IIS Web site migrations 239–240

 running ASP.NET applications for IIS server
 upgrades 181–183

 running ASP.NET applications for IIS Web site
 migrations 251

IIS 6.0 Migration Tool

- installing 226
- migrating additional Web site content 230–231
- migrating content located in virtual directories 231
- migrating content located outside home directories 230–231
- migration process 224
- modifying systemroot folder properties 231–232
- role identification 217
- running 228–229
- steps for migration 217
- verifying clients are not accessing Web sites 226–227
- verifying tool ran successfully 229

IIS Lockdown Tool

- custom server configurations for IIS server upgrades 160
- running during IIS server upgrades 160–162, 175–176
- running during IIS Web site migrations 253
- server roles for IIS server upgrades 161

IIS servers

- additional resources 196
- application compatibility with .NET Framework 155
- application compatibility with worker process isolation mode 149–155
- backing up metabase 163–164
- backing up servers 158, 195
- changes in IIS 6.0 146–148
- compatibility tests 162
- completing upgrades 192–195
- component changes 147–148
- configuring application isolation settings in worker process isolation mode 167–169
- configuring IIS 6.0 properties. *See* configuring IIS 6.0 properties for server upgrades
- configuring IIS 6.0 to host ASP.NET applications. *See* configuring IIS 6.0 to host ASP.NET applications for server upgrades
- configuring IIS 6.0 to run in worker process isolation mode 167
- converting to worker process isolation mode 164–170

IIS servers *(continued)*

- documenting current application isolation settings 166
- enabling client access after upgrades 195
- enabling WWW service after upgrades 147
- example of converting to worker process isolation mode 169–170
- existing Windows server compatibility 145
- hardware compatibility with new operating system 145
- operating system upgrade restrictions 145
- overview of preparing to upgrade 143
- preventing WWW service from being disabled 159–162
- software compatibility with new operating system 146
- steps for performing upgrades 156
- upgrade advantages 138
- upgrade disadvantages 138
- upgrade overview 137–138
- upgrade process 139–142
- upgrading described 137
- verifying clients are not accessing Web sites 158
- verifying success of operating system upgrades 163
- verifying success of Web site and application upgrades 194
- Windows Server 2003 compatibility 145–146

IIS Web sites

- additional resources 266
- application compatibility with .NET Framework 215
- application compatibility with worker process isolation mode 208–215
- application-specific migration tasks 254–262
- backing up target servers after migrations 265
- completing migrations 262–266
- configuring identification numbers (procedure) 344–345
- configuring permissions (procedure) 349–350
- configuring properties. *See* configuring IIS 6.0 properties for Web site migrations
- creating (procedure) 356–357
- creating for ASP.NET applications 23–24
- deploying target servers 221–224
- enabling client access after migrations 265
- enabling content auditing (procedure) 364–366

IIS Web sites (*continued*)

- hardware compatibility 207
- identifying sites and application components to migrate 206–207
- identifying with unique IP addresses (procedure) 358
- installing IIS 6.0 on target servers 223–224
- installing Windows Server 2003 on target servers 223
- manual tasks for Web site migrations See manual tasks for IIS Web site migrations
- migration methods 216
- migration overview 198
- migration process 199–203
- Migration Tool See IIS 6.0 Migration Tool
- overview of preparing to migrate 204
- pausing (procedure) 381–382
- publishing content with FrontPage (procedure) 382–385
- software compatibility 208
- verifying success of Web site and application migrations 264
- Windows Server 2003 compatibility 207–208

impersonation

- application compatibility 81–82
- ASP applications 82
- ASP.NET applications 82–83

in-process session state

- See also session states
- configuring for ASP.NET applications 32
- described 26
- local to Web server 27

installing

- Apache to IIS 6.0 Migration Tool 287–290
- ASP.NET applications See installing ASP.NET applications
- IIS 6.0 (procedure) 374
- IIS 6.0 for ASP.NET application deployments 21
- IIS 6.0 Migration Tool 226
- IIS 6.0 on target servers for Apache Web site migrations 285–286
- IIS 6.0 on target servers for IIS Web site migrations 223–224
- server certificates (procedure) 372–374
- software for IIS Web site migrations 257

installing (*continued*)

- subauthentication (procedure) 374–375
- Windows Server 2003 for ASP.NET application deployments 20
- Windows Server 2003 on target servers for Apache Web site migrations 284–285
- Windows Server 2003 on target servers for IIS Web site migrations 223
- installing ASP.NET applications
 - configuring encryption and validation keys 30–31
 - configuring out-of-process session state for SQL Server 30
 - configuring out-of-process session state with state service 29
 - configuring session states 31–33
 - copying content 25
 - creating virtual directories 24–25
 - creating Web sites and home directories 23–24
 - enabling common storage for session states 26
 - maintaining session states 26–29
 - overview 22
 - process 23
 - securing session state connection strings 33–34
 - storing session states 27–29
- intermediate computers
 - described 270
 - installing Apache to IIS 6.0 Migration Tool on computers running Linux 288
 - installing Apache to IIS 6.0 Migration Tool on computers running Windows 288–289
 - overview of Apache to IIS 6.0 Migration Tool installations 282–283
- Internet Information Services 6.0 See IIS (Internet Information Services) 6.0
- Internet Protocol security (IPSec) 93
- Internet-based Web sites and applications 87
- intranet-based Web sites and applications 87
- IP addresses
 - assigning to network adapters (procedure) 313
 - configuring domain name restrictions (procedure) 336–339
 - configuring for Web sites (procedure) 335
 - creating for IIS Web site migrations 260

- IP addresses *(continued)*
 - identifying Web sites with unique addresses (procedure) 358
 - preventing unauthorized access to Web sites and applications 77
- IPSec (Internet Protocol security) 93
- isolating applications
 - configuring Web sites and applications 83–85
 - impersonation effects on application compatibility 81–83
 - optimizing availability 116–118
 - overview 79–81
 - worker process isolation mode (procedure) 375–376
- isolation modes
 - IIS 5.0 See IIS 5.0 isolation mode
 - worker process See worker process isolation mode

L

- Linux
 - Apache-specific extensions for Apache Web site migrations 295
 - installing Apache to IIS 6.0 Migration Tool 288
 - migrating Web site content for Apache Web site migrations 290
- local user accounts 244–245, 332
- logging
 - centralized binary 101
 - configuration overview 99
 - enabling (procedure) 361
 - IIS log file format 100
 - NCSA Common log file format 100
 - ODBC (Open Database Connectivity) 101
 - overview 98
 - W3C Extended log file format 100

M

- Machine.config
 - metabase property settings for IIS server upgrades 183–192
 - metabase property settings for IIS Web site migrations 252–253
- maintaining Web site and application security
 - configuring IIS logs 99–101
 - file access auditing for Web site content 99

- maintaining Web site and application security *(continued)*
 - overview 94–95
 - patches 96–98
 - reviewing policies, processes, and procedures 101–103
 - updates 96–98
 - Windows Server 2003 security logs 98
- manual startup for services 48
- manual tasks for IIS Web site migrations
 - configuring application isolation settings 238–241
 - creating home directories 235–236
 - creating virtual directories 236
 - creating Web sites 235–236
 - documenting application isolation settings on source servers 238
 - migrating content 237
 - migration process 233–234
 - steps for migration 218–221
 - verifying clients are not accessing Web sites 235
- measuring WWW service availability 113
- metabase
 - backing up (procedure) 315–316
 - backing up for IIS server upgrades 163–164
 - migrating Machine.config attributes for IIS server upgrades 183–192
 - migrating Machine.config attributes for IIS Web site migrations 252–253
 - modifying directly (procedure) 378
 - modifying properties for IIS server upgrades 174–175
 - modifying properties for IIS Web site migrations 256–257
 - modifying systemroot folder properties for IIS Web site migrations 231–232
 - restoring (procedure) 315–316
- Metabase.xml 378
- Microsoft ASP.NET See ASP.NET applications
- Microsoft Security Notification Service newsletter 96
- Microsoft Software Update Services (SUS) 96
- Microsoft Windows Server 2003 See Windows Server 2003
- migrating Apache Web sites
 - additional resources 309
 - application compatibility with worker process isolation mode 277

- migrating Apache Web sites *(continued)*
 - backing up target servers 307
 - configuring FTP service on target servers 286
 - configuring IIS 6.0 302–307
 - configuring MIME types 305
 - configuring properties 305–306
 - configuring server certificates for SSL 306
 - configuring Web service extensions 303–305
 - deploying target servers 283–286
 - enabling client access 308–309
 - errors 293–294
 - IIS 6.0 compatibility 275–276
 - installing IIS 6.0 on target servers 285–286
 - installing Migration Tool 287–290
 - installing Windows Server 2003 on target servers 284–285
 - migrating Apache-specific extensions 294–301
 - migrating configurations 292–293
 - migrating content 290–292
 - migrating database connectivity 299–300
 - migrating database content 298–299
 - migrating dynamic content 296–297
 - migrating external modules 300–301
 - Migration Tool installation options 279–283
 - Migration Tool role 278
 - overview 269–270
 - overview of preparing to migrate 274
 - performing migration steps 286
 - process 271–274
 - recovering from interruptions 293–294
 - verifying clients are not accessing Web sites 290
- migrating CDONTS (procedure) 377
- migrating IIS Web sites
 - additional resources 266
 - application compatibility with .NET Framework 215
 - application compatibility with worker process isolation mode 208–215
 - application-specific tasks 254–262
 - backing up target servers 265
 - completing migrations 262–266
 - configuring properties *See* configuring IIS 6.0 properties for Web site migrations
- migrating IIS Web sites *(continued)*
 - deploying target servers 221–224
 - enabling client access 265
 - hardware compatibility 207
 - identifying sites and application components to migrate 206–207
 - installing IIS 6.0 on target servers 223–224
 - installing Windows Server 2003 on target servers 223
 - manual tasks *See* manual tasks for IIS Web site migrations
 - migration methods 216
 - Migration Tool *See* IIS 6.0 Migration Tool
 - overview 198
 - overview of preparing to migrate 204
 - process 199–203
 - software compatibility 208
 - verifying success of migrations 264
 - Windows Server 2003 compatibility 207–208
- migrating vs. upgrading 137, 197
- migration tools
 - Apache to IIS 6.0 Migration Tool *See* Apache to IIS 6.0 Migration Tool
 - IIS 6.0 Migration Tool *See* IIS 6.0 Migration Tool
- MIME (Multipurpose Internet Mail Extensions) types
 - configuring (procedure) 339–341
 - configuring for Apache Web site migrations 305
 - configuring for IIS server upgrades 174
 - configuring for IIS Web site migrations 246–247
 - enabling only essential 70
- modifying
 - APIs for IIS Web site migrations 256
 - applications for worker process isolation mode for IIS Web site migrations 257
 - code for Windows Server 2003 and IIS 6.0 for IIS Web site migrations 256–257
 - metabase directly (procedure) 378
 - metabase properties for
 - IIS server upgrades 174–175
 - metabase properties for
 - IIS Web site migrations 256–257
 - ODBC data connection strings and DSNs for IIS Web site migrations 259

- modifying (*continued*)
 - registry or unattended setup script for IIS server upgrades 159
 - systemroot folder metabase properties for IIS Web site migrations 231–232
 - Windows components for IIS Web site migrations 256
- monitoring active Web and FTP connections (procedure) 379–381
- Multipurpose Internet Mail Extensions *See* MIME (Multipurpose Internet Mail Extensions) types

N

- NCSA (National Center for Supercomputing Applications)
 - Common log file format 100
- .NET Framework
 - application compatibility for IIS server upgrades 155
 - application compatibility for IIS Web site migrations 215
 - ASP.NET applications *See* ASP.NET applications
 - configuring for IIS server upgrades 180–181
 - configuring for IIS Web site migrations 250
 - correct version for IIS server upgrades 180
 - correct version for IIS Web site migrations 249
 - running applications in IIS 5.0 isolation mode for IIS server upgrades 181–183
 - running applications in IIS 5.0 isolation mode for IIS Web site migrations 251
 - running applications in worker process isolation mode for IIS server upgrades 182–183
 - running applications in worker process isolation mode for IIS Web site migrations 251–252
 - side-by-side configuration 156
- network adapters
 - assigning IP addresses (procedure) 313
 - disabling (procedure) 359
 - enabling (procedure) 362
- NTFS
 - configuring permissions (procedure) 341–342
 - converting disk volumes (procedure) 351
 - setting permissions for security 77–79

O

- ODBC (Open Database Connectivity) 101
- orphaning 357

- out-of-process session state
 - See also* session states
 - configuring with ASP.NET state service 29, 32
 - configuring with SQL Server 30, 33
 - described 26
 - using ASP.NET state service 27
 - using computers running SQL Server 27
- overlapped recycling 120

P

- patches, security 96–98
- pausing Web or FTP sites (procedure) 381–382
- performance enhancements 12, 151, 210–211
- performance tuning *See* tuning application availability performance
- permissions
 - configuring IIS Web site (procedure) 349–350
 - configuring NTFS (procedure) 341–342
 - setting IIS Web site for security 75–77
 - setting NTFS for security 77–79
- pinging
 - optimizing intervals for availability 127
 - worker processes (procedure) 327
 - worker processes for application pool health detection 127
- preventing unauthorized access to Web sites and applications
 - domain name restrictions 77
 - IIS Web site permissions 75–77
 - IP address restrictions 77
 - NTFS permissions 77–79
 - overview 73
 - storing content on dedicated disk volumes 74–75
- process identity
 - configuring application pool identity for availability 130
 - documenting settings for IIS server upgrades 166
 - documenting settings for IIS Web site migrations 239
 - viewing (procedure) 392–393

- processor affinity
 - setting (procedure) 388–390
 - setting on servers with multiple CPUs for availability 126
- publishing Web site content with FrontPage (procedure) 382–385

Q

- quick start
 - availability 109–110
 - deploying ASP.NET applications 18–19
 - migrating Apache Web sites 272–274
 - migrating IIS Web sites 201–203
 - security 44–45
 - upgrading IIS servers 141–142

R

- rapid-fail protection for worker processes
 - configuring (procedure) 327
 - configuring for availability 128
- recycling worker processes
 - elapsed-time intervals 121
 - global locks 120
 - methods 119
 - number of requests 121
 - overlapped recycling 120
 - overview 118
 - scheduled times 122
 - settings 120
 - state data 120
 - used-memory thresholds 122–123
 - virtual-memory thresholds 122
- reducing attack surfaces of Web servers
 - configuring Windows Server 2003 security settings 71–72
 - enabling IIS components and services 59–68
 - enabling MIME types 70
 - enabling Web service extensions 68–70
 - enabling Windows Server 2003 components and services 48–59
 - overview 46–48

- registry entries
 - backup and restore (procedure) 314
 - configuring (procedure) 343–344
 - creating for IIS Web site migrations 261
 - modifying for IIS server upgrades 159
- removing virtual directories
 - IIS server upgrades 177–178
 - procedure 385–386
- request processing time 114
- request-handling goals 113–115
- request-handling reliability 113
- requesting server certificates (procedure) 386
- restarts
 - Apache to IIS 6.0 Migration Tool 294
 - automatic for poorly performing Web sites and applications 13
 - reduced number when administering Web sites and applications 12
- restoring
 - metabase (procedure) 315–316
 - registry entries (procedure) 314
 - Web servers (procedure) 318

S

- scaling enhancements 12, 151, 210–211
- Secure Sockets Layer *See* SSL (Secure Sockets Layer)
- security
 - additional resources 104–105
 - ASP.NET applications 35–36
 - ASP.NET session state connection strings 33–34
 - authentication *See* authentication
 - enabling auditing (procedure) 362–364
 - encryption *See* encryption
 - enhancements 11, 150, 210
 - file access auditing for Web site content 99
 - IIS logs 99–101
 - IIS Web site permissions 75–77
 - IP address and domain name restrictions 77
 - isolating Web sites and applications 79–85
 - NTFS permissions 77–79
 - overview 41–42

security (*continued*)

- overview of maintaining Web site and application security 94-95
- overview of preventing unauthorized access to Web sites and applications 73
- patches 96-98
- process for securing Web sites and applications 43-45
- reducing attack surfaces of Web servers *See* reducing attack surfaces of Web servers
- reviewing policies, processes, and procedures 101-103
- root folders for disk volumes (procedure) 387
- storing content on dedicated disk volumes 74-75
- updates 96-98
- Windows Server 2003 built-in accounts (procedure) 387-388
- Windows Server 2003 security logs 98

Security Notification Service newsletter 96

server certificates

- assigning to Web sites (procedure) 313
- configuring for SSL for Apache Web site migrations 306
- encrypting data with SSL 92-93
- exporting (procedure) 367-368
- installing (procedure) 372-374
- migrating for SSL for IIS Web site migrations 247
- requesting (procedure) 386

service accounts

- adding as member of local administrators group (procedure) 376
- creating (procedure) 352-354
- granting user rights (procedure) 370-372

services

- configuring IIS (procedure) 335
- configuring Windows 2003 (procedure) 350-351
- enabling for IIS server upgrades 176
- enabling IIS 59-68
- enabling Windows Server 2003 48-59
- Windows Server 2003 startup types 49-59

service-user accounts 130

session states

- comparison of methods 27-29
- configuring ASP.NET applications 31-33
- configuring state service on ASP.NET state server (procedure) 342
- creating SQL Server databases (procedure) 354
- enabling common storage for ASP.NET applications 26
- in-process session state *See* in-process session state
- maintaining for ASP.NET applications 26-29
- out-of-process session state *See* out-of-process session state
- securing connection strings 33-34

setting

- processor affinity (procedure) 388-390
- processor affinity for servers with multiple CPUs 126
- request-handling goals 113-115

shutdown time limits for worker processes 8, 12, 129

Software Update Services (SUS) 96

source servers

- configuring FTP service for Apache Web site migrations 286
- described 198, 270
- documenting application isolation settings for IIS Web site migrations 238
- installing Apache to IIS 6.0 Migration Tool on computers running Linux 288
- overview of Apache to IIS 6.0 Migration Tool installations 281

SQL Server

- configuring out-of-process session state 30, 33
- creating databases for ASP.NET session states (procedure) 354
- out-of-process session state described 27

SSL (Secure Sockets Layer)

- configuring server certificates for Apache Web site migrations 306
- encryption 92-93
- exporting server certificates (procedure) 367-368
- installing server certificates (procedure) 372-374
- migrating server certificates for IIS Web site migrations 247
- requesting server certificates (procedure) 386

startup time limits for worker processes 8, 129

- stopping WWW service (procedure) 390
- subauthentication
 - installing (procedure) 374–375
 - not installed by default 135
- SUS (Software Update Services) 96
- system volumes See disk volumes

T

- target servers
 - backing up for Apache Web site migrations 307
 - configuring for Apache Web site migrations 289–290
 - configuring FTP service for Apache Web site migrations 286
 - described 198, 270
 - installing Apache to IIS 6.0 Migration Tool on computers running Windows 288–289
 - installing IIS 6.0 for
 - Apache Web site migrations 285–286
 - installing IIS 6.0 for IIS Web site migrations 223–224
 - installing Windows Server 2003 for Apache Web site migrations 284–285
 - installing Windows Server 2003 for IIS Web site migrations 223
 - overview of Apache to IIS 6.0 Migration Tool installations 282
 - overview of Apache Web site deployments 283
 - overview of IIS Web site deployments 221–222
- testing applications for compatibility
 - conflicts with IIS 6.0 131–132
 - functional compatibility with IIS 6.0 133
 - ISAPIs not enabled in Web service extensions node 133
 - MIME type incompatibility 134
 - overlapped recycling incompatibility 135
 - overview 131
 - recycling incompatibility 134
 - script retrieval incompatibility 133
 - setup tests for IIS 6.0 132
 - single instance application incompatibility 135
 - subauthentication not installed 135
 - version detection incompatibility 132–133
 - wwwroot retrieval incompatibility 133
- testing request handling 115

tools

- Apache to IIS 6.0 Migration Tool See Apache to IIS 6.0 Migration Tool
- IIS 6.0 Migration Tool See IIS 6.0 Migration Tool
- IIS Lockdown Tool See IIS Lockdown Tool
- UrlScan See UrlScan

tuning application availability performance

- configuring idle time-outs for worker processes 124
- configuring request queue limits 124
- configuring Web gardens 125
- managing ASP.NET applications 125
- managing isolation 123–124
- overview 123
- setting processor affinity on servers with multiple CPUs 126

U

- upgrading extended Web sites
 - IIS server upgrades 175
 - procedure 390
- upgrading IIS servers
 - additional resources 196
 - advantages 138
 - application compatibility with .NET Framework 155
 - application compatibility with worker process isolation mode 149–155
 - backing up metabase 163–164
 - backing up servers 158, 195
 - changes in IIS 6.0 146–148
 - compatibility tests 162
 - completing upgrades 192–195
 - component changes 147–148
 - configuring application isolation settings in worker process isolation mode 167–169
 - configuring IIS 6.0 properties See configuring IIS 6.0 properties for server upgrades
 - configuring IIS 6.0 to host ASP.NET applications See configuring IIS 6.0 to host ASP.NET applications for server upgrades
 - configuring IIS 6.0 to run in worker process isolation mode 167
 - converting to worker process isolation mode 164–170

- upgrading IIS servers (*continued*)
 - disadvantages 138
 - documenting current application isolation settings 166
 - enabling client access 195
 - enabling WWW service 147
 - example of converting to worker process isolation mode 169–170
 - existing Windows server compatibility 145
 - hardware compatibility with new operating system 145
 - operating system upgrade restrictions 145
 - overview 137–138
 - overview of preparing to upgrade 143
 - preventing WWW service from being disabled 159–162
 - process 139–142
 - software compatibility with new operating system 146
 - steps for performing upgrades 156
 - upgrading described 137
 - verifying clients are not accessing Web sites 158
 - verifying success of operating system upgrades 163
 - verifying success of Web site and application upgrades 194
 - Windows Server 2003 compatibility 145–146
- upgrading vs. migrating 137, 197
- uptime data, WWW service 368–370
- UriScan
 - running during IIS server upgrades 175–176
 - running during IIS Web site migrations 253
- utilities *See* tools

V

- viewing
 - application isolation configurations (procedure) 391–392
 - application process identity (procedure) 392–393
 - ASP.NET script maps (procedure) 319
 - Web site process identity (procedure) 392–393
- virtual directories
 - creating (procedure) 355–356
 - creating for ASP.NET applications 24–25
 - creating for IIS Web site migrations 236

- virtual directories (*continued*)
 - migrating IIS Web site content 231
 - removing (procedure) 385–386
 - removing for IIS server upgrades 177–178
- VPN (virtual private network) 93

W-Z

- W3C Extended log file format 100
- W3wp.exe 181
- Web gardens
 - benefits 13
 - configuring 125
 - described 12, 123
- Web servers
 - backing up (procedure) 316
 - backing up for ASP.NET deployments 37
 - configuring authentication (procedure) 345–346
 - deploying for ASP.NET applications 19–22
 - deployment overview 2
 - deployment process 3–6
 - existing IIS server upgrade overview 6
 - monitoring connections (procedure) 379–381
 - new IIS server upgrade overview 5
 - reducing attack surfaces *See* reducing attack surfaces of Web servers
 - restoring (procedure) 318
- Web service extensions
 - configuring (procedure) 347–348
 - configuring for Apache Web site migrations 303–305
 - configuring for IIS server upgrades 172–173
 - configuring for IIS Web site migrations 245–246
 - described 172
 - enabling only essential 43, 68–70
- Web sites
 - Apache *See* Apache Web sites
 - IIS *See* IIS Web sites
- Windows Server 2003
 - compatibility for IIS server upgrades 145–146
 - compatibility for IIS Web site migrations 207–208
 - configuring security settings 71–72
 - configuring services (procedure) 350–351

Windows Server 2003 (*continued*)

- enabling only essential components and services 48-59
- enabling security logs 98
- installing for ASP.NET application deployments 20
- installing on target servers for Apache Web site migrations 284-285
- installing on target servers for IIS Web site migrations 223
- modifying code for IIS Web site migrations 256-257
- securing built-in accounts (procedure) 387-388
- services (list) 49-59
- startup types for services 49-59

Windows Update 96

worker process isolation mode

- application changes for IIS server upgrades 153
- application changes for IIS Web site migrations 212
- application compatibility for Apache Web site migrations 277
- application compatibility for IIS server upgrades 149-155
- application compatibility for IIS Web site migrations 208-215
- availability configuration overview 115
- availability enhancements 12, 151-152, 211-212
- benefits 11, 150-152, 210
- compared to IIS 5.0 isolation mode 10
- configuring (procedure) 324
- configuring IIS 6.0 for server upgrades 167
- configuring settings for IIS server upgrades 167-169
- configuring settings for IIS Web site migrations 240-241
- example of converting to 169-170
- isolating applications (procedure) 375-376
- management script changes for IIS server upgrades 154
- management script changes for IIS Web site migrations 213-214
- modifying applications for IIS Web site migrations 257
- overview of converting to 164-165
- performance enhancements 12, 151, 210-211
- provisioning script changes for IIS server upgrades 154

worker process isolation mode (*continued*)

- provisioning script changes for IIS Web site migrations 213-214
- running ASP.NET applications for IIS server upgrades 182-183
- running ASP.NET applications for IIS Web site migrations 251-252
- scaling enhancements 12, 151, 210-211
- security enhancements 11, 150, 210
- verifying application compatibility in labs for IIS server upgrades 155
- verifying application compatibility in labs for IIS Web site migrations 214

worker process ping

- application pool health detection 127
- optimizing intervals for availability 127
- procedure 327

worker process recycling

- elapsed-time intervals 121
- global locks 120
- methods 119
- number of requests 121
- overlapped recycling 120
- overview 118
- scheduled times 122
- settings 120
- state data 120
- used-memory thresholds 122-123
- virtual-memory thresholds 122

WWW service

- availability goals 112-113
- displaying uptime data (procedure) 370
- enabling (procedure) 364
- enabling after IIS server upgrades 147, 172
- gathering uptime data (procedure) 368
- measuring availability 113
- modifying registry or unattended setup script for IIS server upgrades 159
- preventing from being disabled during IIS server upgrades 159-162
- running IIS Lockdown Tool during IIS server upgrades 160-162
- stopping (procedure) 390

